# New Names in North American *Myosurus* (Ranunculaceae)

*Alan T. Whittemore*
Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166, U.S.A.

ABSTRACT. The name *Myosurus aristatus* Bentham is illegitimate, and the North American material often treated as *M. aristatus* is conspecific with *M. apetalus* Gay of Chile. The name *Myosurus apetalus* var. *borealis* Whittemore is described for the North American taxon previously treated as *M. aristatus* subsp. *aristatus*, and the new combination *M. apetalus* var. *montanus* (G. R. Campbell) Whittemore is made for the taxon previously treated as *M. aristatus* subsp. *montanus* (G. R. Campbell) D. E. Stone.

The genus *Myosurus* L. (Ranunculaceae) consists of ca. 15 species found in temperate regions of both hemispheres (Mabberley, 1993). The genus is often considered taxonomically difficult, since the plants are predominantly self-fertilizing and interspecific hybridization is not uncommon (Stone, 1959). However, the North American species are relatively well understood, due largely to the work of Stone (1957, 1959, 1960).

One of the North American species has commonly been known under the name *Myosurus aristatus* Bentham (Campbell, 1952; Davis, 1952; Dorn, 1984, 1992; Hitchcock & Cronquist, 1964; Kearney & Peebles, 1964; Munz & Keck, 1959). However, this name is illegitimate, having been published originally as an avowed substitute for the legitimate name *M. apetalus* Gay (type from Chile). The North and South American plants have been considered conspecific by Lourteig (1951), Raven (1963), Weber & Wittmann (1992), and Wilken (1993). Stone (1957, 1960) recognized two subspecies, *M. aristatus* subsp. *aristatus* and *M. aristatus* subsp. *montanus* (G. R. Campbell) D. E. Stone, differing in characters of the sepals and fruiting heads. However, names for these taxa in *M. apetalus* have never been published.

Campbell (1952) considered *M. apetalus* to be a purely South American species and listed five supposed differences between it and *M. aristatus* of North America: achenes more than 50 per head in *M. apetalus*, fewer than 50 in *M. aristatus;* achene beaks 0.5 mm long in *M. apetalus*, 1–1.5 mm in *M. aristatus;* scapes only slightly exceed leaves in *M. apetalus*, 2–3 times longer in *M. aristatus;* sepals 3–5-nerved in *M. apetalus*, 1-nerved in *M. aristatus;* sepals retained on fruiting spikes in *M. apetalus*, shed after anthesis in *M. aristatus*. However, Campbell had little material from South America, and apparently the revision of the South American species by Lourteig (1951) was not available at the time of Campbell's study. The plants are more variable than Campbell indicated. The number of achenes per head varies from 15 to 100 in South American material; sepals in the South American plant may be either retained on the fruiting spikes or shed after anthesis; the achene beaks vary from 0.2 to 0.9 mm long, 0.3–0.9 times as long as the achene body, in the South American plant, while they are usually longer (0.6–1.4 mm long, 0.5–1.0 times as long as the achene body) in North American material; the scapes at most slightly exceed the leaves in South American specimens, while they are often, but not always, longer in North America; the sepals are 3–5-nerved in the South American plant, similar to sepals of the North American *M. aristatus* subsp. *montanus* but unlike the strongly 1-nerved sepals of *M. aristatus* subsp. *aristatus* sensu Stone. Since none of the differences between North and South American material are absolute, but all overlap, I agree with Lourteig (1951), Raven (1963), Weber & Wittmann (1992), and Wilken (1993) that they are best considered conspecific. However, since several characters show different (though overlapping) ranges of variation on the two continents, separation of the species into varieties seems appropriate.

These taxa have been fully described and illustrated by Lourteig (1951), Campbell (1952), and Stone (1957), and a full treatment of the genus in North America north of Mexico will be published (Whittemore, in press). However, the necessary nomenclature must first be validated.

**Myosurus apetalus** Gay, Fl. Chil. 1: 31. 1845. *Myosurus aristatus* Bentham ex Hooker f. London J. Bot. 6: 458. 1847, illegitimate, earlier name included. TYPE: Chile. Prov. de Coquimbo, damp places in the Cordilleras de las Patos, elev. 11,200 ft., *C. Gay* (no longer extant?).

### Key to Varieties

- 1a. Sepals 1-nerved; outer faces of achenes narrowly elliptical or rectangular .................... 3. *M. apetalus* var. *borealis* Whittemore
- 1b. Sepals 3(–5)-nerved; outer faces of achenes narrowly rhombic or elliptical.
  - 2a. Achene beaks 0.2–0.9 mm long, 0.3–0.9 times as long as achene body; heads of achenes 2.5–18 mm long, not or scarcely exserted beyond the leaves; sepals often persisting on fruiting heads .......................... 1. *M. apetalus* var. *apetalus*
  - 2b. Achene beaks 0.6–1.4 mm long, 0.5–1.0 times as long as achene body; heads of achenes 12–24 mm long, usually exserted well beyond the leaves; sepals never persisting on fruiting heads .......................... 2. *M. apetalus* var. *montanus* (G. R. Campbell) Whittemore

**1. Myosurus apetalus** Gay var. **apetalus.**

*Distribution:* Argentina (Chubut, Neuquén, Patagonia, Río Negro), Chile (Coquimbo, Magallanes, Santiago). Lourteig (1951: 558–560) described and illustrated *M. apetalus* var. *apetalus* and provided full synonymy and specimen citations.

**2. Myosurus apetalus** var. **montanus** (G. R. Campbell) Whittemore, comb. nov. Basionym: *Myosurus minimus* subsp. *montanus* G. R. Campbell, Aliso 2: 394. 1952. *Myosurus aristatus* subsp. *montanus* (G. R. Campbell) D. E. Stone in H. Mason, Flora of the Marshes of California: 503. 1957. TYPE: U.S.A. California: Mono County, 3 mi. NW of Bridgeport, *P. A. Munz 11811* (holotype, RSA not seen; isotype, CAS).

*Distribution:* Canada (Saskatchewan), United States (Arizona, California, Colorado, Montana, Nevada, North Dakota, Oregon, Utah, Wyoming). This taxon was described and illustrated by Stone (1957: 500–503, as *M. aristatus* subsp. *montanus*) and Campbell (1952: 394–395, 402–403, as *M. minimus* subsp. *montanus*); Campbell (1952) also provided specimen citations.

**3. Myosurus apetalus** var. **borealis** Whittemore, var. nov. TYPE: U.S.A. Idaho: Canyon County, Falks Store, beneath the sagebrush, benches, 22 Apr. 1911, *J. F. Macbride 766* (holotype, MO; isotypes, CAS, UC; according to Campbell, 1952, further isotypes (not seen) are deposited at GH and POM).

*Myosurus aristatus* of North American authors, not of Bentham ex Hooker f., nom. illegit.

Sepala 1-nervata; capitula acheniorum 4–9 mm; superficies exterior acheniorium anguste elliptica vel rectangularis; rostra acheniorum 0.6–1.2 mm longa, rostra corpus 0.5–1.0 plo longiora.

Sepals 1-nerved with broad scarious margins; heads of achenes 4–9 mm; scapes often much longer than leaves; outer face of achene narrowly elliptical or rectangular; achene beaks 0.6–1.2 mm long, 0.5–1.0 times as long as achene body.

This taxon was described and illustrated by Stone (1957: 500–503, as *M. aristatus* subsp. *aristatus*) and Campbell (1952: 399–400, 402–403, as *M. aristatus*). Campbell (1952) also provided further specimen citations.

*Paratypes.* CANADA. **British Columbia:** 2–3 mi. E of Oliver, *McCabe 5834* (UC). U.S.A. **California:** Lassen Co., *Williams et al. 86-38-3* (CAS); Modoc Co., *Bethel 25 April 1923* (CAS), *Balls 14693* (CAS); Mono Co., *Breedlove et al. 62756* (CAS); San Bernardino Co., *Peirson 4557* (CAS). **Idaho:** Bannock Co., *Cronquist 2248* (MO); Custer Co., *Hitchcock & Muhlick 9415* (CAS, MO); Elmore Co., *Grimes et al. 1500* (CAS); Franklin Co., *Anderson 1330* (CAS); Nez Perce Co., *Heller & Heller 2960* (MO, UC), *Sandberg May 1892* (MO, UC), *Sandberg et al. 159* (CAS, MO); Washington Co., *Jones 6149* (CAS, MO). **Montana:** Missoula Co., *Barkley 2667* (MO), *Demorest 21* (CAS, MO), *Hitchcock 1561* (CAS), *Keilman 3* (MO), *Kirkwood 1109* (UC). **Nevada:** Elko Co., *Holmgren 897* (UC); Nye Co., *Maguire & Holmgren 25836* (UC); Washoe Co., *Archer 5102* (UC), *Heller 9988* (CAS, MO, UC), *Hillman 16 May 1896* (UC), *Williams et al. 80-2-2* (CAS), *Tiehm 4001* (MO), *Tiehm & Williams 5515* (CAS, MO). **Oregon:** Deschutes Co., *Detling 2635* (UC); Grant Co., *Henderson 5145* (CAS, MO); Klamath Co., *Applegate 4248* (CAS), *Henderson 9364* (CAS); Lake Co., *Peck 25017* (UC), *Peck 25018* (CAS, UC); Malheur Co., *Peck 20564* (UC), *Leiberg 2007* (CAS, UC), *Henderson 9042* (CAS), *Thompson 11332* (CAS, UC); Morrow Co., *Leiberg 14* (UC); Umatilla Co., *Howell 3 May 1882* (MO); Union Co., *Cusick 2194* (MO, UC); Wallowa Co., *Sherwood 459* (CAS, MO); Wasco Co., *Sheldon 10021* (CAS, MO), *Suksdorf 834* (MO, UC). **Utah:** Salt Lake Co., *Garrett 2808* (UC). **Washington:** Adams Co., *Rogers et al. 229* (CAS, MO); Benton Co., *Barkworth 687* (CAS); Grant Co., *Rogers 286* (CAS, MO, UC); Klickitat Co., *Howell 20 April 1882* (MO); Lincoln Co., *Jones 20 May 1905* (UC); Spokane Co., *Milburge 280* (CAS); Stevens Co., *Sharsmith 4010* (CAS); Whitman Co., *Elmer May 1897* (MO), *Meyer 1437* (MO); Yakima Co., *Hitchcock & Martin 3385* (CAS), *Hoover 5652* (CAS); county uncertain, *Brandegee May 1883* (UC), *Howell 20 April 1882* (CAS). **Wyoming:** Carbon Co., *Hartman 2950* (CAS); Uinta Co., *Nelson 4546* (MO), *Nelson 7187* (MO), Yellowstone N.P., *Nelson & Nelson 6074* (MO).

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## Literature Cited

Campbell, G. R. 1952. The genus *Myosurus* L. (Ranunculaceae) in North America. Aliso 2: 389–403.

Davis, R. J. 1952. Flora of Idaho. Wm. C. Brown, Dubuque.

Dorn, R. D. 1984. Vascular Plants of Montana. Mountain West Publishing, Cheyenne.

———. 1992. Vascular Plants of Wyoming, ed. 2. Mountain West Publishing, Cheyenne.

Hitchcock, C. L. & A. Cronquist. 1964. Vascular Plants of the Pacific Northwest. Part 2: Salicaceae to Saxifragaceae. Univ. Washington Press, Seattle.

Kearney, T. H. & R. H. Peebles. 1964. Arizona Flora, 2nd ed. with supplement by J. T. Howell and E. McClintock. Univ. California Press, Berkeley.

Lourteig, A. 1951. Ranunculáceas de Sudamérica Templada. Darwiniana 9: 397–608.

Mabberley, D. J. 1993. The Plant-book: A Portable Dictionary of Higher Plants, revised ed. Cambridge Univ. Press, Cambridge.

Munz, P. A. & D. D. Keck. 1959. A California Flora. Univ. California Press, Berkeley.

Raven, P. H. 1963. Amphitropical relationships in the floras of North and South America. Quart. Rev. Biol. 38: 151–177.

Stone, D. E. 1957. *Myosurus*. Pp. 496–505 *in* H. L. Mason, A Flora of the Marshes of California. Univ. California Press, Berkeley.

———. 1959. A unique balanced breeding system in the vernal pool mouse-tails. Evolution 13: 151–174.

———. 1960. Nuclear cytology of the California mousetails (*Myosurus*). Madroño 15: 139–148.

Weber, W. A. & R. C. Wittmann. 1992. Catalogue of the Colorado Flora: A Biodiversity Baseline. Univ. Press of Colorado, Niwot.

Whittemore, A. T. In press. *Myosurus*. *In:* Flora of North America Editorial Committee (editors), Flora of North America North of Mexico, vol. 3. Oxford Univ. Press, New York.

Wilken, D. H. 1993. *Myosurus*. P. 923 *in* J. C. Hickman (editor), The Jepson Manual: Higher Plants of California. Univ. California Press, Berkeley.